Chapter 1 : Tampa Bay Ecosystem Services - Tampa's Well-Being | Research | US EPA

Ecosystems and social systems are complex adaptive systems: complex because they have many parts and many connections between the parts; adaptive because their feedback structure gives them the ability to change in ways that promote survival in a fluctuating environment.

To remain effective it requires institutional framework and social networks to be nested across scales. In terms of its dynamics, the adaptive cycle has been described as moving slowly from exploitation r to conservation K , maintaining and developing very rapidly from K to release W , continuing rapidly to reorganisation a and back to exploitation r. The adaptive cycle is one of the five heuristics used to understand social-ecological system behaviour. Social or cultural potential can be characterised by the "accumulated networks of relationships-friendship, mutual respect, and trust among people and between people and institutions of governance" [4] p. According to the adaptive cycle heuristic, the levels of both dimensions differ during the course of the cycle along the four phases. The adaptive cycle thus predicts that the four phases of the cycle can be distinguished based on distinct combinations of high or low potential and connectedness. Adaptive governance and SES[edit] The resilience of social-ecological systems is related to the degree of the shock that the system can absorb and remain within a given state. In order to emphasise the key requirements of a social-ecological system for successful adaptive governance, Folke and colleagues [42] contrasted case studies from the Florida Everglades and the Grand Canyon. Both are complex social-ecological systems that have experiences unwanted degradation of their ecosystem services , but differ substantially in terms of their institutional make-up. The governance structure in the Everglades is dominated by the interests of agriculture and environmentalists who have been in conflict over the need to conserve the habitat at the expense of agricultural productivity throughout history. Such an arrangement in governance creates the opportunity for institutional learning to take place, allowing for a successful period of reorganisation and growth. Such an approach to institutional learning is becoming more common as NGOs, scientist and communities collaborate to manage ecosystems. A close conceptual and methodological relation exists between the analysis of social-ecological systems, complexity research, and transdisciplinarity. These three research concepts are based on similar ideas and models of reasoning. Moreover, the research on social-ecological systems almost always uses transdisciplinary mode of operation in order to achieve an adequate problem orientation and to ensure integrative results. This means that scientists from the relevant scientific disciplines or field of research as well as the involved societal stakeholders have to be regarded as elements of the social-ecological system in question. Potential of Social-Ecological Systems Analysis. The human ecosystem as an organizing concept in ecosystem management. Society and Natural Resources, Vol. Island Press, Washington, D. Progress in Human Geography, Vol. The emergence of a perspective for social-ecological systems analysis, Global Environmental Change, Vol. B and Park, TK. Journal of Political Ecology, Vol. The Culture andEcology of Comtnunal Resources. The University of Arizona Press. Complexity and the commons. Complexity theory for a sustainable future. Perspectives for Ecological Complexity. University of Chicago Press, Chicago. A framework to analyze the robustness of social-ecological systems from an institutional perspective. Ecology and Society, Vol. Population and the Environment Multiple-scale integrated assessment of societal metabolism: Environment, Development and Sustainability 3 4: Rights, resources and rural development: Journal of Environmental Management, Vol. Trends in Ecology and Evolution, Vol. Annual Review of Ecology and Systematics, Vol. Reviews in Fish Biology and Fisheries, Vol. Back to the future: Pages â€" in L. Schultz, L A handful of heuristics and some propositions for understanding resilience in social-ecological systems. Ecology and Society 11 1: Environmental Governance, Rutledge, London. Frontier Research for Sustainable Development. Implications for European Research Policy. Healthy country, healthy people:

Drawing from natural ecosystems which are defined as the network of interactions among organisms and between organisms and their environment, social ecology is a framework or set of theoretical principles for understanding the dynamic interrelations among various personal and environmental factors.

Thus, systems thinking, which is the process of understanding how things influence one another within a whole, is central to ecological models. Generally, a system is a community situated within an environment. Examples of systems are health systems, education systems, food systems, and economic systems. Drawing from natural ecosystems which are defined as the network of interactions among organisms and between organisms and their environment, social ecology is a framework or set of theoretical principles for understanding the dynamic interrelations among various personal and environmental factors. This perspective emphasizes the multiple dimensions example: From an ecological perspective, the individual is both a postulate a basic entity whose existence is taken for granted and a unit of measurement. As a postulate, an individual has several characteristics. Second, he is interdependent with other humans; that is, is always part of a population and cannot exist otherwise. Third, he is time bound, or has a finite life cycle. Fourth, he has an innate tendency to preserve and expand life. Fifth, he has capacity for behavioral variability. Two distinct phases of the theory can be identified. Bronfenbrenner [8] stated that "it is useful to distinguish two periods: The Bronfenbrenner ecological model examines human development by studying how human beings create the specific environments in which they live. In other words, human beings develop according to their environment; this can include society as a whole and the period in which they live, which will impact behavior and development. Ecological systems theory[edit] In his original theory, Bronfenbrenner postulated that in order to understand human development, the entire ecological system in which growth occurs needs to be taken into account. This system is composed of five socially organized subsystems that support and guide human development. Furthermore, within and between each system are bi-directional influences. These bi-directional influences imply that relationships have impact in two directions, both away from the individual and towards the individual. Because we potentially have access to these subsystems we are able to have more social knowledge, an increased set of possibilities for learning problem solving, and access to new dimensions of self-exploration. Microsystem[edit] The microsystem is the layer closest to the child and contains the structures with which the child has direct contact. The microsystem encompasses the relationships and interactions a child has with his or her immediate surroundings such as family, school, neighborhood, or childcare environments. However, interactions at outer levels can still impact the inner structures. The microsystem may provide the nurturing centerpiece for the child or become a haunting set of memories. The caring relations between child and parents or other caregivers can help to influence a healthy personality. The child may not be directly involved at this level, but they do feel the positive or negative force involved with the interaction with their own system. The main exosystems that indirectly influence youth through their family include: Furthermore, absence from a system makes it no less powerful in a life. Macrosystems can be used to describe the cultural or social context of various societal groups such as social classes, ethnic groups, or religious affiliates. The effects of larger principles defined by the macrosystem have a cascading influence throughout the interactions of all other layers. It may empower her life so that she, in turn, is more effective and caring with her newborn. Family dynamics need to be framed in the historical context as they occur within each system. Bronfenbrenner [16] suggests that, in many cases, families respond to different stressors within the societal parameters existent in their lives. Processes, per Bronfenbrenner, explain the connection between some aspect of the context or some aspect of the individual and an outcome of interest. The full, revised theory deals with the interaction among processes, person, context and time, and is labeled the Processâ€"Personâ€"Contextâ€"Time model PPCT. Two interdependent propositions define the properties of the model. Furthermore, contrary to the original model, the Processâ€"Personâ€"Contextâ€"Time model is more suitable for scientific investigation. In its early phase and throughout the lifecourse, human development takes place through processes of progressively more complex reciprocal interactions between an active,

evolving biopsychological human organism and the persons, objects and symbols in its immediate environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time. These forms of interaction in the immediate environment are referred to as proximal processes. Proximal processes are fundamental to the theory. They constitute the engines of development because it is by engaging in activities and interactions that individuals come to make sense of their world, understand their place in it, and both play their part in changing the prevailing order while fitting into the existing one. Bronfenbrenner acknowledges here the relevance of biological and genetic aspects of the person. Demand characteristics are those that act as an immediate stimulus to another person, such as age, gender, skin color, and physical appearance. These types of characteristics may influence initial interactions because of the expectations formed immediately. Resource characteristics are those that relate partly to mental and emotional resources such as past experiences, skills, and intelligence, and also to social and material resources access to good food, housing, caring parents, and educational opportunities appropriate to the needs of the particular society. Finally, force characteristics are those that have to do with differences of temperament, motivation, and persistence. According to Bronfenbrenner, two children may have equal resource characteristics, but their developmental trajectories will be quite different if one is motivated to succeed and persists in tasks and the other is not motivated and does not persist. The change can be relatively passive a person changes the environment simply by being in it , to more active the ways in which the person changes the environment are linked to his or her resource characteristics, whether physical, mental, or emotional , to most active the extent to which the person changes the environment is linked, in part, to the desire and drive to do so, or force characteristics. The final element of the PPCT model is time. Time plays a crucial role in human development. Time and timing are equally important because all aspects of the PPCT model can be thought of in terms of relative constancy and change. Fostering of societal attitudes that value work done on behalf of children at all levels: In community health promotion: Basis of intervention programs to address issues such as bullying, obesity, overeating and physical activity. Interventions that use the social ecological model as a framework include mass media campaigns, social marketing, and skills development. In economics , an output is a function of natural resources , human resources, capital resources, and technology. The environment macrosystem dictates a considerable amount to the lifestyle of the individual and the economy of the country. For instance, if the region is mountainous or arid and there is little land for agriculture , the country typically will not prosper as much as another country that has greater resources. This situation is an environmental influence that may be very far reaching. This also includes possibly removing oneself from a potentially dangerous environment or avoiding a sick coworker. On the other hand, some environments are particularly conducive to health benefits. Surrounding oneself with physically fit people will potentially act as a motivator to become more active, diet, or work out at the gym. The government banning trans fat may have a positive top-down effect on the health of all individuals in that state or country. The social ecological model looks at multiple levels of influence on specific health behaviors. Although this perspective is both logical and well grounded, the reality is different in most settings, and there is room for improvement everywhere. A decision may be required of an individual, organization, community, or country. A decision a congressman makes affects anyone in his or her jurisdiction. If one makes the decision not to vote for the President of the United States, one has given oneself no voice in the election. On the international level, if the leadership of the U. There are multiple cross-level and interactive effects of such a decision. Most criticism center around the difficulties to empirically test the theory and model and the broadness of the theory that makes it challenging to intervene at an any given level[citation needed]. Some examples of critiques of the theory are: Challenging to evaluate all components empirically. Failure to acknowledge that children positively cross boundaries to develop complex identities. Tendency to view children as objects. Preoccupation with achieving "normal" childhood without a common understanding of "normal". Fails to see that the variables of social life are in constant interplay and that small variables can change a system. Misses the tension between control and self-realization in child-adult relationships; children can shape culture.

As my SiG fellowship wraps at the end of December , this is the first of a three-part blog post series documenting the insights, decisions, signposts, twists and turns of a social R&D ecosystem.

ShareCompartir The ultimate goal is to stop violence before it begins. Prevention requires understanding the factors that influence violence. CDC uses a four-level social-ecological model to better understand violence and the effect of potential prevention strategies. It allows us to understand the range of factors that put people at risk for violence or protect them from experiencing or perpetrating violence. The overlapping rings in the model illustrate how factors at one level influence factors at another level. Besides helping to clarifying these factors, the model also suggests that in order to prevent violence, it is necessary to act across multiple levels of the model at the same time. This approach is more likely to sustain prevention efforts over time than any single intervention. Individual The first level identifies biological and personal history factors that increase the likelihood of becoming a victim or perpetrator of violence. Some of these factors are age, education, income, substance use, or history of abuse. Prevention strategies at this level promote attitudes, beliefs, and behaviors that prevent violence. Specific approaches may include education and life skills training. Relationship The second level examines close relationships that may increase the risk of experiencing violence as a victim or perpetrator. Prevention strategies at this level may include parenting or family-focused prevention programs, and mentoring and peer programs designed to reduce conflict, foster problem solving skills, and promote healthy relationships. Community The third level explores the settings, such as schools, workplaces, and neighborhoods, in which social relationships occur and seeks to identify the characteristics of these settings that are associated with becoming victims or perpetrators of violence. Prevention strategies at this level impact the social and physical environment â€" for example, by reducing social isolation, improving economic and housing opportunities in neighborhoods, as well as the climate, processes, and policies within school and workplace settings. Societal The fourth level looks at the broad societal factors that help create a climate in which violence is encouraged or inhibited. These factors include social and cultural norms that support violence as an acceptable way to resolve conflicts. Other large societal factors include the health, economic, educational and social policies that help to maintain economic or social inequalities between groups in society. Violence-a global public health problem. World Report on Violence and Health. World Health Organization; Get Email Updates To receive email updates about this page, enter your email address:

Ecological Systems Theory in Social Work domain and rationale, the an ecosystem consists of people, their life.

Later chapters will describe additional emergent properties of ecosystems and social systems. Hierarchical Organization and Emergent Properties Biological systems have a hierarchy of organizational levels that extends from molecules and cells to individual organisms, populations and ecosystems. Every individual plant and animal is a collection of cells; every population is a collection of individual organisms of the same species; and every ecosystem consists of populations of different species. The most important levels of biological organization for human ecology are populations and ecosystems. Each level of biological organization from molecules to ecosystems has characteristic behaviours which emerge at that level. These distinct behaviours, called emergent properties, function synergistically at each level of organization to give that level a life of its own which is greater than the sum of its parts. This happens because all the parts fit together in ways that allow the system as a whole to function in a manner that promotes its survival. Because the parts are interconnected, the behaviour of every part is shaped by feedback loops through the rest of the system. A mixture of positive and negative feedback promotes growth and change in the system as a whole. Emergent properties are easiest to perceive in individual organisms. In simple organisms such as jellyfish, we can identify basic emergent properties such as growth, development of different tissues and organs, homeostasis, reproduction and death. The richness of expression of emergent properties increases with the complexity of the organism. Visual images are not a property of the component cells in organisms; the experience of visual images emerges at the level of an entire organism. Emotions such as fear, anger, anxiety, hate, happiness and love are also emergent properties. The sigmoid curve for population growth, population regulation, genetic evolution and social organization are examples of emergent properties at the population level of organization. They are not properties of the individuals in a population. They emerge as special properties of populations because every individual in a population is affected by what happens in the population as a whole. Taking population regulation as an example, individual plants and animals have the potential to live a long life, producing a large number of offspring. However, the actual survival and reproduction of each individual depends on how many other individuals are in the population and how this number compares to carrying capacity. If the total population overshoots carrying capacity, some individuals in the population are compelled to die from lack of food. The result is population regulation within the limits of carrying capacity - an emergent property of populations. What about emergent properties of ecosystems? The component parts of ecosystems are all limited by their connections to other parts of the ecosystem. More emergent properties of ecosystems will be described in later chapters. Components at one level of organization interact primarily with other components at the same level. They do so by responding to information that emerges from those components. Protein molecules in the cell interact with other molecules in ways that respond to the structure and behaviour of the molecules, not the atoms of which they are composed. Proteins have an intricate three-dimensional structure that emerges at the level of the molecule and provides the basis for interaction with other molecules. When cats hunt mice, they do not process information on all the parts of a mouse in order to detect it. Instead, they respond to key features that emerge at the level of the whole mouse: They do not process information about the cellular structure of these features. Mice respond to cats in a similar way. One emergent property of ecosystems and social systems is counterintuitive behaviour. They sometimes do the opposite of what we expect. The purpose of public housing was to reduce poverty by providing decent housing to low-income people at a price they could afford. However, cheap housing encouraged unskilled people to move from rural areas to cities even when there were no jobs. The large number of unemployed people turned public housing into ghettos of poverty. The effect of public housing was the opposite of its intended purpose because what happened depended not only on the housing but also on feedback loops through other parts of the social system. The story of forest fire protection provides an example of counterintuitive behaviour in ecosystems. Forest managers tried to reduce fire damage by putting out fires. The result was even more fire damage. Details of this story are in Chapter 6. Ecosystems and social systems

are sometimes counterintuitive because they are not easily understood by people whose main existence is at a different level of organization - the level of an individual inside the ecosystem and social system. This difference is one important reason why people find it difficult to predict the ultimate consequences of their actions on ecosystems. Emergent properties of our own individual level of organization - our bodies, our consciousness and our direct interactions with people and other parts of the ecosystem - are obvious to us, but emergent properties at higher levels of organization are not so obvious. From its travels around the body, the red blood cell is quite familiar with the different parts of the body - the brain, the eye and so on - but it is very difficult for it to comprehend vision, thoughts, emotions and activities that come from the body as a whole. People, as a small part of ecosystems and social systems, have the same difficulty comprehending ecosystems and social systems. Emergent properties of social systems Emergent properties of the human social system are important for human ecology because they shape the ways in which people interact with ecosystems. One emergent property is distortion of information when errors accumulate as information passes through a social network. That person whispers the message to a second person, and the message is whispered from one person to another. After everyone has been told the message, the first person and last person tell everyone the message as they understood it. Another emergent property is denial, refusal to recognize or accept the truth when it conflicts with existing beliefs. Selective filtering of information helps to protect existing belief systems of individuals and shared belief systems of society. For example, European nations with global empires were blind to the oppression and exploitation of colonialism. In a similar fashion, it is not unusual for governments and powerful people who profit from unsustainable logging of tropical forests to believe that small-scale peasant farmers are primarily to blame for deforestation, even though local farmers generally use forest resources in an ecologically sound fashion. During the s and s, some ecologists tried to warn the public about the impending dangers of the human population explosion and environmental degradation. Most people, including government officials and business leaders with considerable power, would not believe it, even though the facts were clear. Most people considered warnings about impending environmental problems to be extremist. It took several decades and numerous environmental disasters for people to start accepting that the problems were real. This denial had a major effect on social system - ecosystem interaction because so much time was lost before people started to take the environment seriously. This costly form of denial continues as some people, including influential politicians, persist in doubting the reality of global warming despite overwhelming evidence. Bureaucracies provide examples of emergent properties in human social systems. One emergent property is that bureaucracies are not very effective at dealing with unusual situations. This is because bureaucracies use standard operating procedures to operate efficiently on a large scale. Bureaucracies may be effective for routine matters, but they may not do so well with unusual situations because their procedures are not designed for those situations. Another emergent property of bureaucracies is that they often do things that are contrary to their mission. These are characteristics of a bureaucracy as a whole. They do not derive from the characteristics of individuals in the bureaucracy, who are usually conscientious workers. Their jobs may compel them to do things that make no sense to them personally. Self-Organization Why do all the different parts of an ecosystem fit together so well? What is responsible for organizing all the parts, their functional connections and resulting feedback loops, in a way that allows everything to function together? The amazing answer is that ecosystems organize themselves, and the same is true for social systems. They organize themselves by means of an assembly process resembling the well-known process of natural selection in biological evolution. The particular species in the biological community at a particular place are drawn from a larger pool of species living in the surrounding area. Selection of those species, and their organization into a food web, happens by a process known as community assembly. The community assembly process is an emergent property of ecosystems. The biological community at any particular place is a consequence of past arrivals of various species of plants, animals and microorganisms. Whenever a new species arrives at a site, it will survive and establish a population only if births are initially greater than deaths. Its population will not survive if deaths are greater than births. If the newly arriving species survives, its population will grow exponentially until it reaches carrying capacity as shown in Figure 2. In this way, the new species joins the biological community at the site. There are three community assembly rules that determine whether the

population of a newly arriving species will survive at a site. To survive and become part of the ecosystem, a newly arriving species must satisfy the following conditions: It is adapted to the physical conditions at the site and can survive throughout the year. The site has the right kind of food, and there is enough food and water for the newly arriving plant or animal species to grow and reproduce. Births must exceed deaths when the population is small. For plants, the food is water and mineral nutrients in the soil, plus sunshine. For animals, the food is particular species of plants or animals that they can eat. A newly arriving species will not survive if its food supply is reduced too much by competing plants or animals already at the site and utilizing the same food sources. If the site already has animals that can eat the newly arriving species, the newly arriving species must have the ability to avoid being eaten too much. Deaths cannot exceed births. The following story shows how community assembly works. Imagine a coastal island, 1 kilometre in diameter, where all the plants and animals are killed by a fire. Soon grass is growing everywhere on the island. The farmer who owns the island decides that he wants to raise sheep there. The carrying capacity of the island for sheep is 50 sheep, so the farmer puts 50 sheep on the island. Different species of plants and animals are transported to the island at various times during the first few years after the fire. Each species is added to the food web if it meets the three rules for population survival listed earlier. It is best to follow this story by sketching the new food web whenever another species is added.

Chapter 5 : Socio-ecological system - Wikipedia

The components of well-being, referred to as domains, include Connection to Nature, Cultural Fulfillment, Education, Health, Leisure time, Living Standards, Safety and Security, and Social Cohesion. The HWBI is a combination of the scores for each of the 8 domains.

The pyramid has several levels. Arrange the signs in a roughly pyramid shape starting with the top domain Family Vision: X X X X X X X X X X X X This process is a challenge to both individuals and therapists, a fact that clearly illustrates the pervasive influence of deficit-based assessment and labeling in how therapists perceive individuals, and how individuals perceive themselves. Take heartâ€"it gets easier with repeated useâ€"and eventually it will be routine to generate fifty or one hundred positive aspects of a person or a family in their present environment. Self Assessment[edit] It is also useful to provide people or families with self-assessment tools, and for those who feel pressured or embarrassed by the Life Domain Assessment, this may be a better fit. In two or three pages, try to elicit background information and basic goals from your new client. Keep the wording simple. What things does your child enjoy doing? What talents or skills does your child have? List some positive things about your family. What are your dreams and future plans for your child? What does your family hope to achieve in the next month? What does your family hope to achieve this year? When are the best times for you, your family, and other important people to meet with us to plan and discuss as a team? List the strengths of these individuals and their family systems, speculating as appropriate. Phil[edit] Phil is 16 years old, and the oldest of 4 children. Phil is very quiet but has half a dozen friends. He plays in a garage band with a few guys he knows from school. He has a weekend job, but often does not return home after getting off work. Usually, he goes straight over to the home of a friend who is two years older. There, he is allowed to drink as much beer and hard liquor as he wants. He gets very drunk each time and usually spends the night sleeping on the floor, or on the couch if it is available. Phil sometimes cries when he is drunk, saying he hates how his life is and wishes he were dead. Phil hopes to be an architect someday and takes drafting in school. Rachel[edit] Rachel is 11 years old, but already has a reputation at school about her interest in boys, despite never having had a boyfriend or at least one her own age. She is a good student. Her father is employed by the school and even the students are aware of a rumor that he is having an affair with another staff member. Rachel has a number of friends, but all except one are boys. She often invites people over, but never to her bedroom. The room is littered with erotic magazines, liquor containers, and smells like cigarettes and something else. Seth hosts drinking parties at the house regularly, where marijuana is smoked freely, and no-one has ever objected to Rachel inviting her own friends. Recently, one of her friends from school died in an accident. Rachel only remarked that is was a shame that he died a virgin.

Chapter 6 : What is an ecosystem? (article) | Ecology | Khan Academy

ANDE Entrepreneurial Ecosystem Diagnostic Toolkit 3 enabling environment, the Rainforest Blueprint focuses on developing an entrepreneurial culture, and the GSM Association's approach is targeted at the information and communication technology.

Purchase Books Assessment This assessment accompanies Unit 1 and should be given on the suggested assessment day or after completing the unit. The central thematic questions addressed in the unit or across units How do organisms obtain and use the matter and energy they need to live and grow? How do matter and energy move through an ecosystem? What happens to ecosystems when the environment changes? How can a disruption in the population of one organism impact an entire ecosystem? After a population has been disrupted is it possible to fully restore the balance of the ecosystem? What transferable understandings students should have as readers by the end of the unit Authors write expository nonfiction in order to present facts about a topic. An expository text is fact-based with the goal of educating a reader. Expository fiction is clear, concise, organized and often gets to the point quickly. Using text features to make meaning: A diagram is a drawing or picture that has labels showing the important parts. Labels are words or phrases located near photos or illustrations. Both help you know the parts of something to better understand how they are categorized or connected for the purpose of understanding their parts, construction or how they work. Diagrams often build onto information provided in the text. You can often find the bold words in the glossary or index and they are always important to note. Sometimes authors also define the bold words in context. Authors sometimes organize their writing by cause and effect. Paragraphs structured as cause and effect explain reasons why something happened or the effects of something. Time usually does not pass in a cause and effect paragraph, whereas in a chronological paragraph it may. Authors sometimes organize their writing by problem and solution. Paragraphs structured as problem and solution express a dilemma or issue and something that was, can be, or should be done to fix it. Problem and solution is very similar to cause and effect, however, cause and effect structures do not propose solutions to negative events. They just explain how they happen. Paragraphs structured as a description include lots of information about a certain topic or idea. Specific skills to focus on when giving feedback on informational writing assignments Uses details and facts from the text to support a claim definitions, cause and effect, pros and cons Uses a variety of paragraph structure depending on information cause and effect, pros and cons, boxes and bullets, description etc. Selects the most relevant text-based details and examples from the text Groups supporting ideas and relevant evidence in paragraph sections Uses domain-specific vocabulary This unit serves as the launch for informational writing instruction. There are two main goals of the unit. The first is on writing strong, focused paragraphs as a way of teaching back information learned from an informational text. Building on what students learned in fourth grade, students will be pushed to use different brainstorming structures to write paragraphs that include a strong claim, evidence, and a structure that matches the different brainstorm structures. Additionally, students will begin to explore quoting directly from the text in order to support a claim or idea from the text, which aligns with the reading focus on RI5. Students will also explore how to use vocabulary to show understanding of the science material. Paragraph writing should be reinforced through daily target tasks after being introduced on writing days. The second focus for the unit is on conducting short research projects. Through both a guided and an individual project, students will practice using multiple sources to build knowledge of different aspects of a topic. Once they have gathered evidence, students will learn how to sort evidence and turn the evidence into a structured research report. The research writing in this unit is significantly more scaffolded. In later units, as students become more familiar with conducting their own research, evaluating sources, and synthesizing information, less scaffolding will be needed. Literary terms, text-based vocabulary, idioms and word parts to be taught with the text The vocabulary focus for this unit is on using context and text features to figure out domain-specific words. Understanding and using scientific vocabulary is a key part of reading and writing about nonfiction texts, therefore, vocabulary acquisition should be a large focus of this unit. Organisms interact in feeding relationships in ecosystems food chains and food webs. A food chain is a

group of plants and animals that are related to one another through what they eat. A food web is the interconnected feeding relationship that is found within an ecosystem. It is often made up of many smaller food chains. Producers make their own food, which is also used by animals consumers. Animals obtain food from eating plants or eating other animals. Consumers are organisms in a food chain that eat other organisms, especially living organisms. Decomposers are organisms in a food chain that break down dead matter by eating dead plant and animal materials and then recycling the nutrients in the system. An herbivore is an animal that only eats plants. A carnivore is an animal that eats only other animals. An omnivore is an animal that eats both plants and animals. When environments change, some organisms survive and reproduce; others move, decline, or die. Organisms have ranges of tolerance for environmental factors. Apex predators are predators that are at the top of the food web. If an ecosystem is disrupted, it can negatively affect an ecosystem. Topics covered in prior grades or units that will be helpful background for students in this unit Fourth Grade Science, Life Science Intellectual Prep Suggestions for how to prepare to teach this unit Building Background Knowledge: Research and learn about food chains and food webs, and their importance within an ecosystem. Research and learn about different ways that food chains and food webs are being disrupted. Be prepared to lead students in discussions of the pros and cons of the different disruptions and solutions in place. Internalizing Unit Content and Standards: Read all unit texts, annotating for evidence of key standards and content knowledge. Notice how key standards are assessed. Internalize unit informational and science standards. What does mastery for each standard look like? Plan and gather materials for hands-on lab days. Create an exemplar model for lessons 5, 10, and Write an exemplar response for the student research project. What additional skills and strategies need to be taught and reinforced so students will be successful conducting research? Determine a process for modeling and introducing annotation. What are the annotation expectations? How will they be rolled out over the course the unit? How will the importance of annotation be communicated to students? Using targeted speaking and listening standards as a guide, identify teaching points that will help establish a culture where rich academic discussions can occur frequently. Determine how and when to scaffold in discussion teaching points. Determine a structure for introducing and reinforcing vocabulary over the course of the entire unit. Determine a structure for daily writing about reading. What are the expectations? How will you ensure that there is a minimum of 20 minutes of writing daily?

Chapter 7 : What are Entrepreneurial Ecosystems? â€" Small & Growing Businesses

Prevention strategies at this level impact the social and physical environment - for example, by reducing social isolation, improving economic and housing opportunities in neighborhoods, as well as the climate, processes, and policies within school and workplace settings.

Chapter 8 : Babson Entrepreneurship Ecosystem Project |

As the social valuation of ecosystem services is intended to guide decision-making on ecosystem services management, it might be more convenient to group stakeholders according to their use of the ecosystem (e.g., irrigators, walkers, and conservationists) and their role in the government and social life of the area.

Chapter 9 : The Social-Ecological Model: A Framework for Prevention|Violence Prevention|Injury Center|C

A social-ecological system consists of 'a bio-geo-physical' unit and its associated social actors and institutions. Social-ecological systems are complex and adaptive and delimited by spatial or functional boundaries surrounding particular ecosystems and their problem context.